[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2021-0197; Project Identifier 2018-SW-107-AD]

RIN 2120-AA64

Airworthiness Directives; Airbus Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for Airbus Helicopters Model EC 155B and EC155B1 helicopters. This proposed AD would require replacing the main gearbox (MGB), or as an alternative, replacing the epicyclic reduction gear module for certain serial numbered planet gear assemblies installed on the MGB. This proposed AD would also require inspecting the MGB magnetic plugs, MGB filter, and oil sump for particles. Depending on the outcome of these inspections, this proposed AD would require further inspections and replacing certain parts. This proposed AD would also prohibit installing certain parts. This proposed AD was prompted by the failure of an MGB second stage planet gear. The actions of this proposed AD are intended to correct an unsafe condition on these helicopters.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments by any of the following methods:

- Federal eRulemaking Docket: Go to https://www.regulations.gov. Follow the online instructions for sending your comments electronically.
- Fax: (202) 493-2251.
- Mail: Send comments to the U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590-0001.
- Hand Delivery: Deliver to the “Mail” address between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed rule, contact Airbus Helicopters, 2701 North Forum Drive, Grand Prairie, TX 75052; telephone (972) 641-0000 or (800) 232-0323; fax (972) 641-3775; or at https://www.airbus.com/helicopters/services/technical-support.html. You may view the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177.

Examining the AD Docket

You may examine the AD docket on the Internet at https://www.regulations.gov by searching for and locating Docket No. FAA-2021-0197; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the European Aviation Safety Agency (now European Union Aviation Safety Agency) (EASA) AD, any comments received, and other information. The street address for Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: Rao Edupuganti, Aerospace Engineer, Dynamic Systems Section, Technical Innovation Policy Branch, Policy & Innovation Division, FAA, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-5110; email rao.edupuganti@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include "Docket No. FAA-2021-0197; Project Identifier 2018-SW-107-AD" at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to https://www.regulations.gov, including any personal information you provide. The agency will also post a report summarizing each

substantive verbal contact received about this NPRM.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as "PROPIN." The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Rao Edupuganti, Aerospace Engineer, Dynamic Systems Section, Technical Innovation Policy Branch, Policy & Innovation Division, FAA, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-5110; email rao.edupuganti@faa.gov. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

EASA, which is the Technical Agent for the Member States of the European Union, has issued EASA AD 2018-0263, dated December 7, 2018 (EASA AD 2018-0263), to correct an unsafe condition for Airbus Helicopters Model EC 155 B and EC 155 B1 helicopters. EASA advises that after an accident on a Model EC225 helicopter, an investigation revealed the failure of an MGB second stage planet gear. EASA states that one of the two types of planet gear used in the MGB epicyclic module is subject to higher outer race contact pressures and therefore is more susceptible to spalling and cracking. EASA AD 2018-0263 consequently requires repetitive inspections of the MGB magnetic plugs, the MGB filer, and the oil sump for particles, and depending on the results of those inspections, removing or replacing certain parts. EASA AD 2018-0263 also requires reducing the life limit of Type Z planet gear assemblies. EASA AD 2018-0263 also requires, if certain gear assemblies are installed, either replacing the MGB or replacing the epicyclic reduction gear. Finally EASA AD 2018-0263 prohibits installing a Type Y

planet gear assembly or an MGB with a Type Y planet gear assembly on any helicopter.

FAA's Determination

These helicopters have been approved by EASA and are approved for operation in the United States. Pursuant to the FAA's bilateral agreement with the European Union, EASA has notified the FAA of the unsafe condition described in its AD. The FAA is proposing this AD after evaluating all known relevant information and determining that an unsafe condition is likely to exist or develop on other products of the same type designs.

Related Service Information Under 1 CFR part 51

The FAA reviewed Airbus Helicopters Alert Service Bulletin ASB No. EC155-05A034, Revision 5, dated December 4, 2018 (ASB EC155-05A34 Rev 5) for Model EC 155 helicopters, which specifies periodic inspections of the MGB magnetic plugs, the MGB filter, and the oil sump for particles. ASB EC155-05A34 Rev 5 also specifies identifying the type of gear assembly installed in the MGB and replacing any Type Y planet gear assembly within 50 hours time-in-service (TIS). For Type Z gear assemblies that have logged less than 1,800 hours TIS since new, this service information specifies replacing the gear assembly before exceeding 1,800 total hours TIS, and for Type Z gear assemblies that have logged 1,800 or more total hours TIS, replacing the gear assembly within 600 hours TIS.

The FAA also reviewed Airbus Helicopters Service Bulletin SB No. EC155-63-016, Revision 4, dated July 26, 2018, for Model EC 155 helicopters. This service information specifies procedures for replacing the MGB epicyclic reduction gear without removing the MGB.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Proposed AD Requirements in this NPRM

This proposed AD would require for helicopters with at least one Type Y planet gear assembly with a certain serial number (S/N) installed, or at least one Type Z planet gear assembly with a certain S/N installed, within 10 hours TIS after the effective date of

this AD and thereafter at intervals not to exceed 10 hours TIS, inspecting the MGB magnetic plugs for particles. If there are particles, the proposed AD would require further inspections and analyses, and replacing the MGB, depending on the type and the size of the particles.

This proposed AD would also require for helicopters with a Type Y planet gear assembly with a certain S/N installed, within 25 hours TIS after the effective date of this AD, inspecting the MGB filter for particles. If there are particles, this proposed AD would require further inspections and analyses, and replacing the MGB, depending on the type and the size of the particles. This proposed AD would require for helicopters with at least one Type Y planet gear assembly with a certain S/N installed, within 50 hours TIS after the effective date of this AD, replacing the MGB. As an alternative to replacing the MGB, this proposed AD would allow replacing the epicyclic reduction gear in the affected MGB.

Additionally, this proposed AD would require, for helicopters without any Type Y planet gear assembly but at least one Type Z planet gear assembly with a certain S/N installed, replacing the MGB within 50 hours TIS after the effective date of this AD or before any planet gear assembly accumulates 1,800 total hours TIS, whichever occurs later. As an alternative to replacing the MGB, this proposed AD would allow replacing the epicyclic reduction gear in the affected MGB.

This proposed AD would require, for helicopters with at least one Type Z planet gear with a certain S/N installed, within certain compliance times specified in the figures in this AD, inspecting the MGB filter and inspecting the oil sump for particles. If there are particles this proposed AD would require further inspections and analyses, and replacing the MGB, depending on the type and the size of the particles.

This proposed AD would prohibit installing an MGB with a certain serial numbered Type Y planet gear assembly and this proposed AD would also prohibit installing a Type Y planet gear assembly with a certain S/N on any helicopter.

This proposed AD would also prohibit installing certain serial numbered Type Z planet gear assemblies that have accumulated 1,800 or more total hours TIS and prohibit installing an MGB with certain serial numbered Type Z planet gear assemblies that have

accumulated 1,800 or more total hours TIS.

Finally, this proposed AD would prohibit installing an MGB if the type of the planet gear assembly cannot be determined and would also prohibit installing any planet gear assembly if the type cannot be determined.

Differences between this Proposed AD and the EASA AD

EASA AD 2018-0263 specifies compliance times based on flight hours and calendar dates. This proposed AD would set compliance times based on hours TIS or before further flight. EASA AD 2018-0263 allows a pilot to inspect the MGB magnetic plugs for particles, while this proposed AD would not. For helicopters with at least one affected Type Z planet gear assembly that has accumulated 1,800 or more total hours TIS installed, EASA AD 2018-0263 requires replacing the MGB or epicyclic reduction gear within 600 flight hours after March 16, 2018, whereas this proposed AD would require either of those replacements within 50 hours TIS after the effective date of this proposed AD instead. If 16NCD13 particles are present, EASA AD 2018-0263 requires taking a 1 liter sample of oil and returning it to Airbus Helicopters and removing the MGB for depot-level inspection, whereas this proposed AD would require replacing the MGB instead.

Interim Action

The FAA considers this proposed AD to be an interim action. If final action is later identified, the FAA might consider further rulemaking then.

Costs of Compliance

The FAA estimates that this proposed AD would affect 14 helicopters of U.S. Registry. The FAA estimates that operators may incur the following costs in order to comply with this proposed AD. Labor costs are estimated at $85 per work-hour.

Inspecting the magnetic plugs for particle deposits would take about 1 work-hour for an estimated cost of $85 per helicopter per inspection cycle.

Inspecting the MGB filter and oil sump for particle deposits would take about 1 work-hour for an estimated cost of $85 per helicopter per inspection cycle.

Replacing an MGB would take about 42 work-hours, and parts would cost about $295,000 (overhauled) for an estimated total cost of $298,570 per helicopter.

Replacing the epicyclic reduction gear would take about 56 work-hours and parts would cost about $11,404 for an estimated total cost of $16,164 per helicopter.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed, I certify this proposed regulation:

1. Is not a "significant regulatory action" under Executive Order 12866,

2. Would not affect intrastate aviation in Alaska, and

3. Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

Airbus Helicopters: Docket No. FAA-2021-0197; Project Identifier 2018-SW-107-AD.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Airbus Helicopters Model EC 155B and EC155B1 helicopters, certificated in any category.

(d) Subject

Joint Aircraft Service Component (JASC) Code: 6300, Main Rotor Drive System.

(e) Unsafe Condition

This AD defines the unsafe condition as failure of a main gearbox (MGB) planet gear assembly. This condition could result in failure of the MGB and subsequent loss of helicopter control.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) For helicopters with at least one Type Y planet gear assembly with a serial number (S/N) listed in Appendix 4.A. of Airbus Helicopters Alert Service Bulletin ASB No. EC155-05A034, Revision 5, dated December 4, 2018 (ASB EC-155-05A034 Rev 5) or with at least one Type Z planet gear assembly with an S/N listed in Appendix 4.B. of ASB EC155-05A034 Rev 5 installed, within 10 hours time-in-service (TIS) after the effective date of this AD, and thereafter at intervals not to exceed 10 hours TIS, inspect

the MGB magnetic plugs for particles. If there are any particles that consist of any scale, flake, splinter, or other particle other than cotter pin fragments, pieces of lock wire, swarf, abrasion, or miscellaneous non-metallic waste, and any of the planet gears have accumulated less than 50 total hours TIS, before further flight, inspect the MGB filter and oil sump for particles. Thereafter, for 25 hours TIS, continue to inspect the MGB plugs for particles before each flight, inspect the MGB filter and oil sump for particles at intervals not to exceed 25 hours TIS, and inspect the cumulative surface area of the particles collected from the magnetic plugs, the MGB filter, and the oil sump, since last MGB overhaul, or since new if no overhaul has been performed.

Note to paragraph (g)(1): Airbus Helicopters service information refers to an MGB filter as an oil filter.

(i) If the total surface area of the particles is less than 3 mm^2, examine the particles with the largest surface area (S), greatest length (L), and greatest thickness (e).

(A) If any (S) of all of the particles is less than or equal to 1 mm^2, the (L) is less than or equal to 1.5 mm, and the (e) is less than or equal to 0.2 mm, inspect the MGB plugs for particles before further flight, and inspect the MGB filter and oil sump for particles within 25 hours TIS. Thereafter:

(*1*) For 25 hours TIS, continue to inspect the MGB plugs for particles before each flight and perform the actions required by paragraphs (g)(1)(i) and (ii) of this AD.

(*2*) Inspect the MGB filter and oil sump for particles at intervals not to exceed 25 hours TIS and perform the actions required by paragraphs (g)(1)(i) and (ii) of this AD.

(B) If any (S) is greater than 1 mm^2, (L) is greater than 1.5 mm, or (e) is greater than 0.2 mm, perform a metallurgical analysis for any 16NCD13 particles, using a method in accordance with FAA-approved procedures.

(C) If there are any 16NCD13 particles, before further flight, replace the MGB with an airworthy MGB.

(D) If there are no 16NCD13 particles, inspect the MGB plugs for particles before further flight and inspect the MGB filter and oil sump for particles within 25 hours TIS. Thereafter:

(*1*) For 25 hours TIS, continue to inspect the MGB plugs for particles before each

flight and perform the actions required by paragraphs (g)(1)(i) and (ii) of this AD.

(*2*) Inspect the MGB filter and oil sump for particles at intervals not to exceed 25 hours TIS and perform the actions required by paragraphs (g)(1)(i) and (ii) of this AD.

(ii) If the total surface area of collected particles is greater than or equal to 3 mm^2, before further flight, perform a metallurgical analysis for any 16NCD13 particles using a method in accordance with FAA-approved procedures.

(A) If there are any 16NCD13 particles, before further flight, replace the MGB with an airworthy MGB.

(B) If there are no 16NCD13 particles, inspect the MGB plugs for particles before further flight and inspect the MGB filter and oil sump for particles within 25 hours TIS. Thereafter:

(*1*) For 25 hours TIS, continue to inspect the MGB plugs for particles before each flight and perform the actions required by paragraphs (g)(1)(i) and (ii) of this AD.

(*2*) Inspect the MGB filter and oil sump for particles at intervals not to exceed 25 hours TIS and perform the actions required by paragraphs (g)(1)(i) and (ii) of this AD.

(2) For helicopters with at least one Type Y planet gear assembly with an S/N listed in Appendix 4.A. of ASB EC-155-05A034 Rev 5 installed, within 25 hours TIS after the effective date of this AD, inspect the MGB filter for particles. If there are any particles that consist of any scale, flake, splinter, or particle other than cotter pin fragments, pieces of lock wire, swarf, abrasion, or miscellaneous non-metallic waste, and any of the planet gears have accumulated more than 50 total hours TIS, before further flight, perform the actions required by paragraphs (g)(1)(i) and (ii) of this AD.

(3) For helicopters with at least one Type Y planet gear assembly with an S/N listed in Appendix 4.A. of ASB EC-155-05A034 Rev 5 installed, within 50 hours TIS after the effective date of this AD, replace the MGB or as an alternative to replacing an affected MGB, replace the epicyclic reduction gear module in the affected MGB in accordance with paragraph 3.B.2. of the Accomplishment Instructions of Airbus Helicopters Service Bulletin SB No. EC155-63-016, Revision 4, dated July 26, 2018 (SB EC155-63-016 Rev 4), except you are not required to contact Airbus Helicopters.

(4) For helicopters without any Type Y planet gear assembly installed but with at

least one Type Z planet gear assembly with an S/N listed in Appendix 4.B. of ASB EC155-05A034 Rev 5 installed, within 50 hours TIS after the effective date of this AD, or before any gear accumulates 1,800 total hours TIS, whichever occurs later, replace the MGB or as an alternative to replacing an affected MGB, replace the epicyclic reduction gear module in the affected MGB in accordance with paragraph 3.B.2. of the Accomplishment Instructions of SB EC155-63-016 Rev 4, except you are not required to contact Airbus Helicopters.

(5) For helicopters with at least one Type Z planet gear assembly with an S/N listed in Appendix 4.B. of ASB EC155-05A034 Rev 5 installed, inspect the MGB filter for particles within the compliance times specified in Figure 1 to paragraph (g)(5) of this AD and inspect the oil sump for particles within the compliance times specified in Figure 2 to paragraph (g)(5) of this AD, based on the total hours TIS accumulated by the Type Z planet gear with the most total hours TIS accumulated since first installation in an MGB. If there are particles, before further flight, perform the actions required by paragraphs (g)(1)(i) and (ii) of this AD.

Total Hours TIS Accumulated	**Compliance Time for Initial Inspection**	**Compliance Time for Repetitive Inspections**
Less than 400 total hours TIS	Within 55 hours TIS after the effective date of this AD	Within 55 hours TIS
400 or more total hours TIS	Within 25 hours TIS after the effective date of this AD	Within 25 hours TIS

Figure 1 to Paragraph (g)(5)

Total Hours TIS Accumulated	Compliance Time for Initial Inspection	Compliance Time for Repetitive Inspections
Less than 400 total hours TIS	Before exceeding 400 hours TIS after the effective date of this AD	Within 55 hours TIS
400 or more total hours TIS	Within 55 hours TIS after the effective date of this AD	Within 55 hours TIS

Figure 2 to Paragraph (g)(5)

(6) As of the effective date of this AD, do not install a type Y planet gear assembly with an S/N listed in Appendix 4.A. of ASB EC155-05A034 Rev 5 on any helicopter, and do not install an MGB with a Type Y planet gear assembly with an S/N listed in Appendix 4.A. of ASB EC155-05A034 Rev 5 on any helicopter.

(7) As of the effective date of this AD, do not install a Type Z planet gear assembly with an S/N listed in Appendix 4.B. of ASB EC155-05A034 Rev 5 that has accumulated 1,800 or more total hours TIS on any helicopter, and do not install an MGB with at least one Type Z planet gear assembly with an S/N listed in Appendix 4.B. of ASB EC155-05A034 Rev 5 that has accumulated 1,800 or more total hours TIS on any helicopter.

(8) As of the effective date of this AD, do not install any planet gear on any helicopter if the planet gear assembly type cannot be determined, and do not install any MGB on any helicopter if any of the planet gear assembly types cannot be determined.

(h) Alternative Methods of Compliance (AMOCs)

(1) The Manager, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the International Validation Branch, send it to the attention of the person identified in paragraph (i)(1) of this AD. Information may be emailed to: 9-AVS-AIR-

730-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(i) Related Information

(1) For more information about this AD, contact Rao Edupuganti, Aerospace Engineer, Dynamic Systems Section, Technical Innovation Policy Branch, Policy & Innovation Division, FAA, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-5110; email rao.edupuganti@faa.gov.

(2) For service information identified in this AD, contact Airbus Helicopters, 2701 North Forum Drive, Grand Prairie, TX 75052; telephone (972) 641-0000 or (800) 232-0323; fax (972) 641-3775; or at https://www.airbus.com/helicopters/services/technical-support.html. You may view the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177.

(3) The subject of this AD is addressed in European Aviation Safety Agency (now European Union Aviation Safety Agency) (EASA) AD 2018-0263, dated December 7, 2018. You may view the EASA AD on the Internet at https://www.regulations.gov in the AD Docket.

Issued on July 14, 2021.

Lance T. Gant, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

[FR Doc. 2021-15477 Filed: 7/21/2021 8:45 am; Publication Date: 7/22/2021]